

VANESSA LIU

Computer Science | (647) 668-0313 | vwslu@uwaterloo.ca

[LinkedIn](#) | [Github](#) | [Personal Website](#)

TECHNICAL SKILLS

Languages: Python, C, C++, SQL, Bash, JavaScript, TypeScript, HTML, CSS

Frameworks & Libraries: Django, Django REST, Jest, Pytest, Git, MySQL, Redux, React, Next.js, Three.js, GSAP, Storybook

EXPERIENCE

Top Hat - Full Stack Developer Intern

Toronto, ON | January 2023 - April 2023

- Built several **RESTful API** endpoints with the **Django REST Framework** including one to backfill user events, while also enhancing other endpoints such as a roster sync feature in the application, which resulted in notable efficiency gains.
- Produced new features for the Top Hat application by implementing UI updates with **JavaScript** and designing **Python** functions tested with **Jest** and **Pytest**, while using open-source **observability tools** to monitor each feature's impact on the app.
- Managed database schema changes using **Django migrations** to reinforce security for models and wrote and optimized complex database queries, leading to improvement in the scalability and performance of the application.
- Resolved client-facing bugs using a combination of debugging tools, **SQL queries**, code analysis and collaboration with team members and increased the number of bugs fixed in total by **20%**.

Jam3 - Developer Intern

Toronto, ON | May 2022 - August 2022

- Constructed key components using **JavaScript**, added **CSS** styling and content, and resolved bugs for Sonos' new product launch site, resulting in a highly successful launch and an exceptional user experience.
- Utilized technologies like **Next.js**, **TypeScript**, **SASS**, **Redux** and **GSAP** to create responsive, experience-focused sites with reusable components to reduce development time by **15%** and ensure consistency in design and functionality.
- Leveraged **Agile** methodologies and attended daily meetings to collaborate effectively with team members, using **Jira** as a task manager to organize the progress of projects and maximize velocity.
- Engaged in training projects and improved them for future employees by providing sustained feedback and collaborating using **Git** to test the project process and re-organize tasks.

PROJECTS

Biquadris Video Game *(Source provided upon request)*

- Coordinated smoothly in a team of 3 to design and produce a two-player game with text-based and graphical visuals in **C++**.
- Implemented the Model-View-Controller, Factory, Observer and Decorator **design patterns** to practice reusability and solve intricate problems related to block movement, block collision, row clearing and game display.
- Employed **dynamic memory allocation** through pointers and vectors for a more efficient and flexible **object-oriented program**.

"The Stages of Growth" Experience Visualizer

- Designed and created an audio-visual web experience using **Three.js** with **UI** functionality animated with **GSAP**.
- Effectively connected abstract concepts to the project components by altering colours, textures and lighting in the 3D scene.

"Finn" Financial Discord Bot

- Worked collaboratively in a group of 10 peers to launch an all-in-one financial analytics and smart portfolio-creator Discord bot.
- Extracted data using **yFinance** to provide key statistics and build a desired portfolio based on user needs.

"Vantoria" Entertainment Discord Bot

- Developed a multi-purpose discord bot using **discord.py** and slash commands featuring several mini-games, a responsive quote generation system using message reactions, the ability to create, edit and delete customized user profiles and more.
- Accessed and stored user information by utilizing **MySQL** database systems and web-scraped with **BeautifulSoup** to add content.

EDUCATION

University of Waterloo

Waterloo, ON | September 2021 - May 2026 (Expected)

- Candidate for Bachelor of Computer Science, Honours Co-op
- **Relevant courses:** Data Structures and Data Management, Object-Oriented Software Development, Logic and Computation, Designing Functional Programs, Elementary Algorithm Design, Financial Markets and Data Analytics

ACTIVITIES & INTERESTS

- **Interests:** Art and Design, Music, Piano, Singing, Video Games, Exercising, Reading webcomics